

AMENDMENTS TO THE CLAIMS

1. (Currently Amended): A method of modulating at least one photosensitive trait in a plant comprising altering the level of ~~phytochrome and flowering time~~ PHYTOCHROME AND FLOWERING TIME 1 (PFT1) protein in a plant, wherein said PFT1 protein is encoded by a nucleotide sequence hybridizing to SEQ ID NO: 2 under very high stringent wash conditions comprising at least one wash at 0.1x SSC, 0.1% SDS, at 60°C for 15 minutes, or has an amino acid sequence at least 45% identical to SEQ ID NO: 3.

2. (Original): The method of claim 1, wherein the photosensitive trait is flowering time, shade avoidance syndrome, stem elongation or leaf number.

3. (Original): The method of claim 1, wherein said PFT1 protein has the amino acid sequence set forth in SEQ ID NO. 3 or conservative variants thereof.

4. (Original): The method of claim 1, wherein the level of PFT1 protein is altered by producing a plant having an expression vector having a gene encoding the PFT1 protein.

5. (Original): The method of claim 4, wherein the gene encoding the PFT1 protein has a nucleotide sequence that encodes the amino acid sequence set forth in SEQ ID NO. 3 or conservative variants thereof.

6. (Original): The method of claim 4, wherein the gene encoding the PFT1 protein has the nucleotide sequence set forth in SEQ ID NO. 2.

7. (Currently Amended): A method of modulating a photosensitive trait in a plant, comprising:

transforming a plant cell with an expression vector comprising a gene that encodes a PFT1 protein, wherein said PFT1 protein is encoded by a nucleotide sequence hybridizing to SEQ ID NO: 2 under very high stringent wash conditions comprising at least one wash at 0.1x SSC, 0.1%

SDS, at 60°C for 15 minutes, or has an amino acid sequence at least 45% identical to SEQ ID NO: 3; and

growing said plant cell into a plant under conditions that allow the expression of the PFT1 protein thereby modulating a photosensitive trait.

8. (Original): The method of claim 7, wherein the PFT1 protein is overexpressed in said plant.

9. (Original): The method of claim 7, wherein the PFT1 protein is encoded by a gene comprising the nucleotide sequence shown in SEQ ID NO: 2.

10. (Original): The method of claim 7, wherein the expression vector comprises a promoter selected from the group comprising a constitutive promoter and an inducible promoter.

11. (Original): The method of claim 7, wherein the plant is selected from the group consisting of: wheat, barley, rye, oat, flax, millet, corn, tomato, rice and tobacco plants.

12. (Original): The method of claim 7, wherein the photosensitive trait is a trait selected from the group consisting of: flowering time, leaf number, stem elongation, and red/far red response.

13. (Previously Presented): A method of claim 12, wherein the photosensitive trait is flowering time, and said flowering time is decreased.

14. (Withdrawn- Currently Amended): A method of modulating a photosensitive trait in a plant comprising: contacting a plant cell, or plant, with an inhibitor of a PFT1 gene, wherein said PFT1 gene has a nucleotide sequence that hybridizes to SEQ ID NO: 2 under very high stringent wash conditions comprising at least one wash at 0.1x SSC, 0.1% SDS, at 60°C for 15

minutes, or has an amino acid sequence at least 45% identical to SEQ ID NO: 3, such that expression of the PFT1 gene is reduced compared to a plant not contacted with the inhibitor.

15. (Withdrawn): The method of claim 14, wherein the PFT1 gene comprises the nucleotide sequence shown in SEQ ID NO: 2.

16. (Withdrawn): The method of claim 14, wherein the inhibitor comprises an expression vector expressing a protein that inhibits expression of the PFT1 gene.

17. (Withdrawn): The method of claim 14, wherein the plant is selected from the group consisting of: wheat, barley, rye, oat, flax, millet, corn, tomato, rice and tobacco plants.

18. (Withdrawn): The method of claim 14, wherein the inhibitor comprises an antisense molecule that inhibits the PFT1 gene.

19. (Withdrawn): The method of claim 14, wherein inhibitor comprises a short interfering RNA (siRNA) configured to inhibit the production of a PFT1 gene product.

20. (Withdrawn): The method of claim 14, wherein the photosensitive trait is a trait selected from the group consisting of: flowering time, leaf number, stem elongation, shade avoidance syndrome and red/far red response.

21. (Withdrawn): The method of claim 20, wherein the photosensitive trait is flowering time, and said flowering time is increased.

22. (Withdrawn): The method of claim 20, wherein the photosensitive trait is shade avoidance syndrome, and said plant exhibits a depressed shade avoidance syndrome.

23. (Currently Amended): A transgenic plant having at least one modulated photosensitive trait as compared to a wild-type plant, wherein the transgenic plant comprises a recombinant expression vector that expresses a nucleic acid encoding a PFT1 gene, wherein said PFT1 gene has a nucleotide sequence that hybridizes to SEQ ID NO: 2 under very high stringent

wash conditions comprising at least one wash at 0.1x SSC, 0.1% SDS, at 60°C for 15 minutes, or has an amino acid sequence at least 45% identical to SEQ ID NO: 3.

24. (Original): The transgenic plant of claim 23, wherein the PFT1 gene is overexpressed.

25. (Currently Amended): A recombinant nucleic acid ~~sequence~~ comprising SEQ ID NO:2.

26. (Currently Amended): A recombinant nucleic acid ~~sequence~~ comprising a nucleotide sequence encoding SEQ ID NO:3.

27. (Currently Amended): A recombinant nucleic acid ~~sequence hybridizing to~~ comprising a nucleotide sequence that is at least 90% identical to SEQ ID NO:2 ~~under stringent wash conditions.~~

28. (Canceled)

29. (Currently Amended): A transgenic plant comprising a recombinant expression vector that expresses the recombinant nucleic acid sequence of claims 25, 26, or 27, ~~or 28~~.

30. (Original): The transgenic plant of claim 29, wherein the recombinant nucleic acid sequence is overexpressed.

31. (Previously Presented): The transgenic plant of claim 29, wherein the recombinant nucleic acid sequence is operably linked to a promoter.

32. (Original): The transgenic plant of claim 31, wherein the promoter is selected from the group comprising a constitutive promoter and an inducible promoter.

33. (Original): The transgenic plant of claim 29, wherein the plant is selected from the group consisting of: wheat, barley, rye, oat, flax, millet, corn, tomato, rice and tobacco plants.

34. (Currently Amended): A seed comprising a recombinant expression vector derived from the transgenic plant of claim 29 that expresses the recombinant nucleic acid of claims 25, 26, or 27.

35. (Original): A plant tissue derived from the transgenic plant of claim 29.

36. (Original): The plant tissue of claim 35, wherein said tissue is a flower.

37. (Withdrawn-Currently Amended): An isolated protein

encoded by a nucleotide sequence hybridizing to SEQ ID NO: 2 under very high stringent wash conditions comprising at least one wash at 0.1x SSC, 0.1% SDS, at 60°C for 15 minutes, or

has an amino acid sequence at least 45% identical to SEQ ID NO: 3.

38. (Canceled)